Declaration and Power of Attorney

As below-named inventors, we hereby declare that:

Our residences, post office addresses, and citizenships are as stated below next to our names.

We believe that we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled **Electrochemical Gas Sensor With Passage For Receiving Gas**, bearing Serial No. 10/007,234, filed October 22, 2001.

We hereby state that we have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. To the best of our knowledge, information, and belief the facts stated therein are true.

We acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

We hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(3) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT International Application which designated at least one country other than the United States, listed below, any foreign application for patent or inventor's certificate, or PCT International Application having a filing date before that of the application on which priority is claimed.

None

We hereby claim the benefit under Title 35, United States Code, §119(e) of any United States Provisional Application(s) listed below.

None

We hereby claim the benefit under Title 35, United States Code, §120 of any United States Application(s), or §365(c) of any PCT International Application designating the United States, listed below, and insofar as the subject matter of each of the claims of this Application is not disclosed in the prior United States or PCT Application in the manner provided by the first paragraph of Title 35, United States Code, §112, we acknowledge the duty to disclose information which is

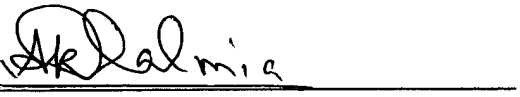
material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

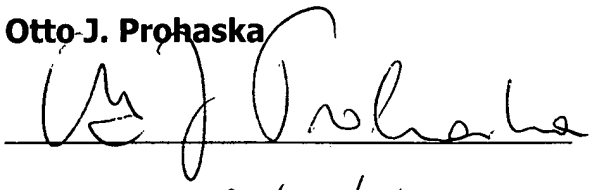
None

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

We hereby appoint Wesley W. Whitmyer, Jr., Registration No. 33,558, and David Chen, Registration No. 46,613, of ST.ONGE STEWARD JOHNSTON & REENS LLC; 986 Bedford Street; Stamford, Connecticut 06905-5619 (203 324-6155); with full power of substitution, association and revocation, as attorney to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

Please direct all telephone calls and correspondence to Wesley W. Whitmyer, Jr. at the above address and telephone number.

Full name of first inventor:	**Avinash Dalmia**
Inventor's signature	
Date:	1/20/04
Residence:	Hamden, Connecticut
Citizenship:	A citizen of India
Post Office Address:	810 Aspen Glen Drive Hamden, CT 06518

Full name of second inventor:	**Otto J. Prohaska**
Inventor's signature	
Date:	02/03/04
Residence:	Seymour, Connecticut
Citizenship:	A citizen of the United States
Post Office Address:	7 Hull Road Seymour, CT 06483-2137

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	Avinash Dalmia, *et al.*
Serial No. 10/007,234	Filing Date: October 22, 2001
Title of Application:	Electrochemical Gas Sensor With Passage For Receiving Gas
Confirmation No. 3660	Art Unit: 1753
Examiner	Kaj K. Olsen

Mail Stop Non-Fee Amendment
Commissioner for Patents
Post Office Box 1450
Alexandria, VA 22313-1450

Response to First Official Action

In response to the First Official Action of December 15, 2003, Applicants herewith present its amendment and remarks. Please amend the claims as detailed below.

Mailing Certificate: I hereby certify that this correspondence is today being deposited with the U.S. Postal Service as *First Class Mail* in an envelope addressed to: Commissioner for Patents and Trademarks; Post Office Box 1450; Alexandria, VA 22313-1450.

March 2 2004

Caroline B. Gahagan

In the Claims

1. (currently amended) An electrochemical sensor, comprising:

a substrate having a surface, said surface having at least one notch for holding gas;

an electrolytic material extending over said surface and spaced apart from said surface and said notch for providing an electrical connection; and

a film of electrode ~~conductive~~ material placed between and in contact with both said surface and said electrolytic material for defining a passage ~~for receiving gas~~.

2. (original) The electrochemical sensor according to claim 1, wherein said electrolytic material is not in contact with said at least one notch.

3. (currently amended) The electrochemical sensor according to claim 1, wherein a second film of electrode ~~conductive~~ material is deposited on at least one area of said at least one notch.

4. (original) The electrochemical sensor according to claim 1, wherein said substrate is an electrically insulating material.

5. (original) The electrochemical sensor according to claim 1, wherein said substrate is glass.

6. (original) The electrochemical sensor according to claim 1, wherein said film is a metallic material.

7. (original) The electrochemical sensor according to claim 1, wherein said electrolytic material is a polymer.

8. (original) The electrochemical sensor according to claim 1, wherein said electrolytic material is in a solid state.

9. (original) The electrochemical sensor according to claim 1, wherein said at least one notch is etched.

10. (original) The electrochemical sensor according to claim 1, wherein said electrolytic material is Nafion.

11. (original) The electrochemical sensor according to claim 3, wherein a second electrolytic material is placed in contact with said second film.

12. (original) The electrochemical sensor according to claim 11, wherein said second electrolytic material is spin coated on said second film.

13. (currently amended) An electrochemical sensor, comprising:

a substrate having a surface, said surface having at least one notch for holding gas;

a first electrolytic material extending over said surface and spaced apart from said surface and said notch for providing an electrical connection;

a first film of electrode ~~conductive~~ material placed between and in contact with both said surface and said first electrolytic material for defining a passage ~~for receiving gas~~; and

a second film of electrode ~~conductive~~ material deposited on at least one area of said notch.

14. (original) The electrochemical sensor according to claim 13, wherein a second electrolytic material is placed in contact with said second film.

15. (original) The electrochemical sensor according to claim 13, wherein said at least one notch is etched.

16. (currently amended) An electrochemical sensor, comprising:

a substrate having a surface, said surface having at least one notch for holding gas;

a first electrolytic material extending over said surface and spaced apart from said surface and said notch for providing an electrical connection;

a first film of electrode ~~conductive~~ material placed between and in contact with both said surface and said first electrolytic material for defining a passage ~~for receiving gas~~;

a second film of electrode ~~conductive~~ material deposited on at least one area of said notch; and

a second electrolytic material placed in contact with said second film.

17. (original) The electrochemical sensor according to claim 16, wherein said second electrolytic material is spin coated on said second film.

Remarks

The Examiner objected to claims 13 and 14 as being substantially duplicative of claims 3 and 11, respectively. Claims 16 and 17 were objected to for similar reasons. Applicants agree that, as stated in the office action, "it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim." Therefore, Applicants submit that these objections are premature and that they should be held in abeyance until one of the claims are allowed, at which point Applicants will cancel all duplicative claims.

Applicants enclose a newly executed oath identifying this application by serial number and filing date.

The Examiner rejected claims 1-17 under 35 USC 112 as being indefinite because the claims do not specify whether or not the electrolyte 30 is spaced apart from the substrate in the areas of where the conductive film is located or elsewhere. Applicants submit the electrolyte 30 is spaced apart from the substrate at all locations and not only in the areas where the conductive film is located. Because the electrolyte does not contact the substrate in areas where the film is absent, as indicated in the office action, and because the claims specify the electrolyte is spaced apart from the substrate, Applicants submit no amendments are necessary as the claims are consistent with the figures. With respect to the other 112 rejections based on whether or not the notch holds gas and film receives gas, Applicants amended the applicable claims to obviate the rejections.

The Examiner rejected claims 1-4, 6, 8, 9, 13, and 15 under 35 USC 102 as being anticipated by U.S. Patent 6,218,036 to Shiratori ("Shiratori") and claims 1, 3, 4, 6-9,

and 11-17 under 35 USC 102 as being anticipated by U.S. Patent 5,492,611 to Sugama ("Sugama").

All claims require, among other elements, a substrate, an electrolytic material spaced apart from the substrate, and a film of electrode material between and in contact with both the substrate and electrolytic material. Neither Shiratori nor Sugama discloses a film of electrode material placed in contact with both the substrate and electrolytic material, as required in all of Applicants' claims, and therefore cannot anticipate Applicants' invention.

Shiratori requires a charge collector be placed between the electrode 7 or 9 and the separator, which the Examiner equates to Applicants' substrate. Hence, the electrode cannot be in contact with the separator or substrate, as claimed in all of Applicants' claims. Because Shiratori's teaching of a charge collector between the electrode 7 or 9 and separator is away from Applicants' film of electrode material being in contact with the substrate, Shiratori does not anticipate Applicants' claimed invention and the rejections should be withdrawn.

Sugama requires an insulating layer 203 be placed between the electrode 204 or 205 and substrate 201. Hence, the electrode cannot be in contact with the substrate, as claimed in all of Applicants' claims. Because Sugama's teaching of an insulating member between the electrode and substrate is away from Applicants' film of electrode material being in contact with the substrate, Sugama does not anticipate Applicants' claimed invention and the rejections should be withdrawn.

In view of the above amendments and remarks that are directed to all of the independent claims, which Applicants submit are allowable over the cited art, all claims depending from the independent claims should also be allowable. Therefore, the rejections under 35 USC 103 that are directed to dependent claims should be withdrawn.

Respectfully submitted,

Wesley W. Whitmyer, Jr., Registration No. 33,558
David Chen, Registration No. 46,613
Attorneys for Applicants
ST.ONGE STEWARD JOHNSTON & REENS LLC
986 Bedford Street
Stamford, CT 06905-5619
203 324-6155